

REMARKS

Claims 1-34 are pending.

Claims 1-6 were rejected as unpatentable over U.S. Patent No. 6,137,573 (Luke et al.) and claims 7-34 were rejected as unpatentable over U.S. Patent No. 5,684,545 (Dou et al.). As discussed below, applicant respectfully disagrees.

Each of the independent claims recites an interference pattern generating means “for inclining the wavefront of the reflected beam” from the first or second reflector. Various ways of inclining the wavefront are disclosed at page 15, line 18 – page 16, line 2, and some of those techniques are recited in the dependent claims. To clarify the claimed subject matter, claims 1, 7, 14, 21 and 28 have been amended to recite “wherein the wavefronts of the beams that are combined to generate the interference pattern have optical axes inclined with respect to one another.” Several other minor clarifying amendments have been made to the claims as well.

As discussed in greater detail below, neither reference discloses or suggests inclining the wavefronts. Instead, the combined wavefronts that form the interference pattern in the cited references appear substantially parallel to one another—the same as in the prior art disclosed in FIG. 6 of the applicant's specification and as discussed in the background section of the specification.

For example, the Luke et al. patent discloses an apparatus that includes a Michaelson interferometer 14 (FIG. 1). The interferometer includes an optical element (*e.g.*, lens 44) a beamsplitter 46, a first reflector (*e.g.*, mirror 56) and a second reflector (*e.g.*, mirror 64). The reflected beams recombine as an interference beam at the beamsplitter 46. The interference beam is sent to another beamsplitter (dichroic mirror 66) which splits the beam into beams of two different wavelengths. The split beams are sent to detectors 78, 82 whose outputs are

Applicant finds no disclosure or suggestion in the Luke et al. patent of inclining the wavefront of one of the reflected beams. The Office action simply states that “the act of inclining the reflector to generate the interference pattern is well known” and that “the insertion of a wedge in an optical path to change the characteristics of the light and thereby create interference is well known in the art.” (Underlining added) The Office action, however, fails to point to any basis for those assertions and, in any event, points to no motivation for changing the apparatus of the Luke et al. patent so that the wavefronts incline with respect to one another. As explained by the Court of Appeals for the Federal Circuit, a showing of obviousness under 35 U.S.C. 103 must be “clear and particular.” *See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). Deficiencies of the cited references cannot be remedied by general conclusions about what is “basic knowledge or common sense.” *In re Lee*, 277 F.3d 1338, 1345 (Fed. Cir. 2002).

Similarly, the Dou et al. patent discloses a Mach-Zender interferometer 10 (FIG. 1) that includes a beam splitter 14 and first and second reflectors (e.g., mirrors 20, 22). The reflected waves are recombined by another beam splitter 24 to provide an interference wave 26. A detector (e.g., camera 34) records the interferogram and sends it to the computer 38 to obtain the phase difference.

Again, applicant finds no disclosure or suggestion in the Dou et al. patent of inclining the wavefront of one of the reflected beams. The Office action simply states that “the inclination of a reflector or beam splitter to change a property of light to generate interference is well known” and that “the insertion of a wedge in an optical path to change the characteristics of the light and thereby create interference is well known in the art.” (Underlining added) The Office action, however, fails to point to any basis for those assertions and, in any event, points to no motivation for changing the apparatus of the Dou et al. patent so that the wavefronts incline with respect to one another. As noted above, deficiencies of the cited references cannot be remedied by general conclusions about what is “basic knowledge or common sense.” *In re Lee*, 277 F.3d 1338, 1345 (Fed. Cir. 2002).

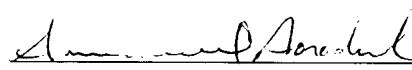
Furthermore, the independent claims recite a signal processor for counting intensity changes of the light beams based on signals "from the first photo-detector and the second photo-detector." In contrast, as can be seen, for example, from FIG. 1 of the Dou et al. patent, the computer is connected to one camera 34 only; it is *not* connected to the camera 48. Therefore, even if the cameras 34, 48 correspond to the photo-detectors recited in the claims, the computer does not count intensity changes of light beams from the first photo-detector and the second photo-detector.

In view of the foregoing remarks, applicant respectfully requests reconsideration and withdrawal of the rejections of the claims.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 9/2/03



Samuel Borodach
Reg. No. 38,388

Fish & Richardson P.C.
45 Rockefeller Plaza, Suite 2800
New York, New York 10111
Telephone: (212) 765-5070
Facsimile: (212) 258-2291